

Patent

Customer No.: 31561
Docket No. 11209-US-PA
Application No.: 10/605,326

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

Applicant : Yeh et al.

Application No. : 10/605,326

Filed : 2003/9/23

For : METHOD OF FORMING CONTACT OPENING AND
METHOD OF FORMING SEMICONDUCTOR DEVICE

Art Unit : 2813

Examiner : SMOOT, STEPHEN V

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TRANSMITTAL LETTER

002-1-703-872-9306

(Via fax: 1+16+2 pages)

Assistant Commissioner for Patents
Arlington, Virginia 22202

Dear Sir,

In response to the Office Action dated August 24, 2004, please find the *Amendment and Response to Office Action*, in 16 pages, in response to paper No. 08212004.

A copy of each of the replacement sheet for drawings and appendix is enclosed.

I believe that no fee is incurred. However, the Commissioner is authorized to charge any fees required in connection with the filing of this paper to account No. 50-2620 (Order No.: 11209-US-PA)

Thank you for your assistance in the subject matter. If you have any questions, please feel free to contact me.

Respectfully Submitted,
JIANQ CHYUN Intellectual Property Office

Date: Nov. 23, 2004By: Belinda Lee

Belinda Lee

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Customer No.: 31561
Application No.: 10605,326
Docket No.: 11209 US PA

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application
Application No.: 10/605,326
Filed: September 23, 2003
For: Method Of Forming Contact Opening
And Method Of Forming Semiconductor
Device

Applicant: Fang-Yu Yeh et al.
Examiner: Smoot, Stephen W
Art Unit 2813

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No fee is believed to be due. However, the Commissioner is authorized to charge any fees required in connection with the filing of this paper to account No. 50-2620 (Order No.: 11209 -US-PA)

RESPONSE TO OFFICE ACTION

U.S. Patent and Trademark Office
Commissioner for Patents
220 20th Street South
Customer Window, Mail Stop Amendment
Crystal Plaza Two, Lobby, Room 1B03
Arlington, Virginia 22202

Sir:

In response to the Office Action dated August 24, 2004, please enter the following amendments and consider the following remarks.

Customer No.: 31561
Application No.: 10605,326
Docket No.: 11209-US-PA

IN THE TITLE:

Please amend the title of the invention as follows:

**"METHOD OF FORMING SEMICONDUCTOR DEVICE WITH NON-
CONFORMAL LINER LAYER THAT IS THINNER ON SIDEWALL
SURFACES"**

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IN THE DRAWINGS:

Please substitute Figures 2E and 2C with the replacement drawings. Roth

IN THE SPECIFICATION

Please amend paragraph [0027] as follows.

[0027] In one embodiment of this invention, the conductive structure 112 is a gate structure comprising a gate dielectric layer 104, a polysilicon layer 106 and a metal silicide layer 108, for example. To form the conductive structure 112, a dielectric layer(not shown ~~show~~), polysilicon layer(not shown ~~show~~), a metal silicide layer(not shown ~~show~~) and a silicon nitride layer(not shown ~~show~~) are sequentially deposited over the substrate 100. Thereafter, photolithographic and etching processes are carried out to pattern the silicon nitride layer and form a cap layer 110. Using the cap layer 110 as an etching mask, the metal silicide layer and the polysilicon layer are patterned to form the gate structure 112. In the process of patterning the gate structure 112 through an etching operation, a portion of the gate of the gate dielectric layer 104 is reduced.